ABSTRACT OF THE DISCLOSURE

Two types of image signals are obtained from a solid-state image pickup device in a frame transfer system and subject to signal processing so as to extend the dynamic range. Two types of mutually different image signals are obtained from a solid-state image pickup device (11). The two types of image signals obtained through time division are matched in timing by a line memory (16). An arithmetic circuit (20) multiplies image data D1 with ratio R of storage times and subtracts image data D2 from the multiplication result R·D1 so as to generate smear data S0. The smear data S0 is multiplied with 1/(R-1) so as to generate smear data S representing the proper smear component. The smear data S is subtracted from image data D1 and D2, and the subtraction results are added to generate image data D3.